Supplementary Material (ESI) for Journal of Materials Chemistry
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Supplementary Information

Transformation of ZnTe Nanowires to CdTe Nanowires through the Formation of ZnTe/CdTe Core/Shell Structure by Vapor Transport

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Figure S1: EDX data of (a) ZnTe and (b) CdTe NWs as shown in Figure 1.

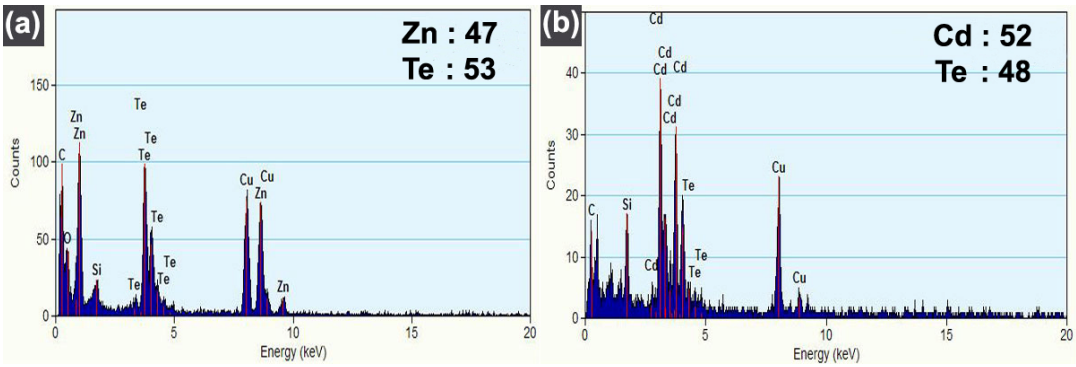

Figure S2: (a) EDX spectrum at the shell (1) and core (2) positions of $Zn_{0.5}Cd_{0.5}Te$/CdTe core/shell nanocables as shown in Figure 2d. This sample also contains the $Zn_{0.5}Cd_{0.5}Te$ NWs without well-separated outerlayers. (b) The EDX line-scan and (c) EDX spectrun of another NWs shows the avg. 50 % Cd doping at the core.

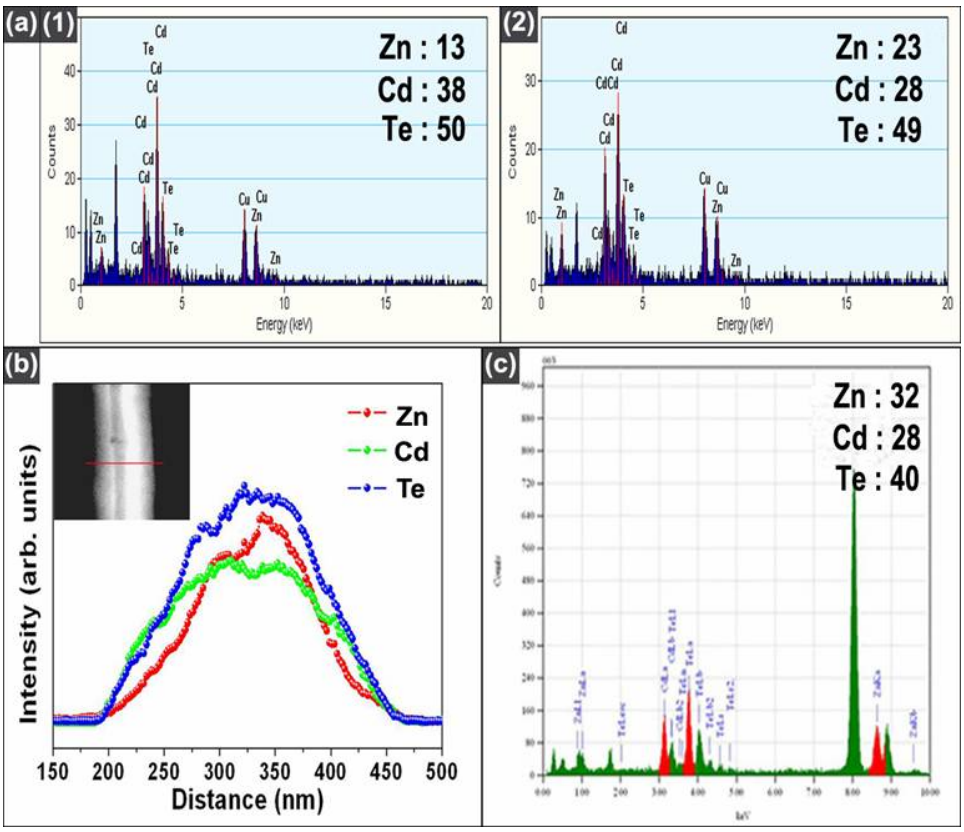

Figure S3: EDX spectrum of (a) ZnCdTe **1** and (b) ZnCdTe **3** NWs, as shown in Figure 3.

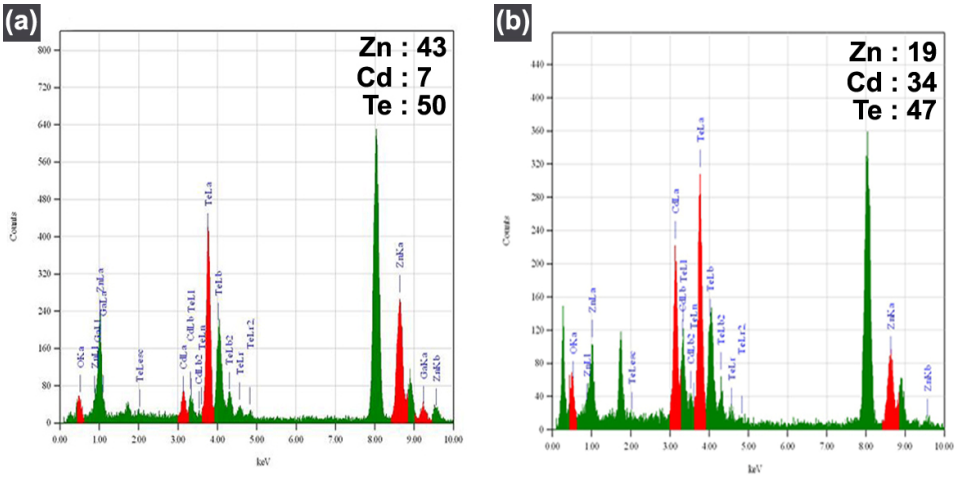

Figure S4: (a) Raman spectra of ZnTe powders (Aldrich, 99.99 %) and ZnTe NWs. The excitation wavelength is 514.5 nm from an Ar ion laser. The two peaks at 205 and 410 cm^{-1} are assigned to the first and second order ZnTe longitudinal optical (LO) phonon modes, respectively.[1] The weak peak at 172 cm^{-1} is assigned to the transverse optical (TO) mode. The peaks in the lower frequency region (120-140 cm^{-1}), as marked by *, probably originate from disorder activated transverse or longitudinal acoustic modes.[2] (b) Raman spectra of CdTe powders (Aldrich, 99.99+ %) and CdTe NWs. The CdTe NWs show two peaks at 140 and 165 cm^{-1}, which are assigned to the TO and LO modes of CdTe, respectively.[3] (c) Raman spectra of ZnCdTe **1-3** NWs. As the Cd content increases, the ZnTe peaks disappear, while the CdTe peaks become dominant. The peak position of ZnTe appears at the lower frequency region as compared to that of pure ZnTe. The peak position of CdTe initially shifts to the lower frequency region, but move back to that of pure CdTe. This result is consistent with the previous work on bulk CdZnTe films.[4]

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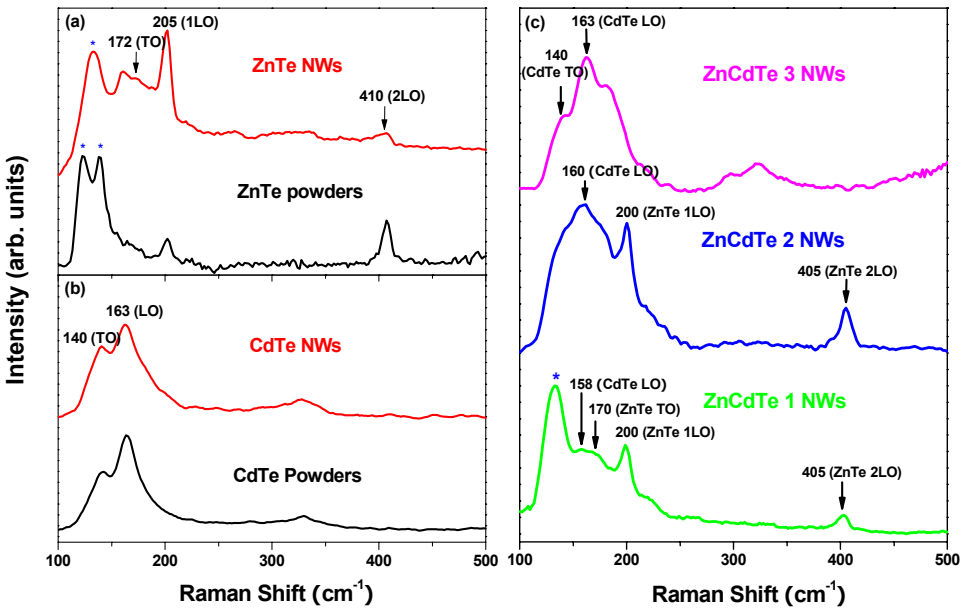
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